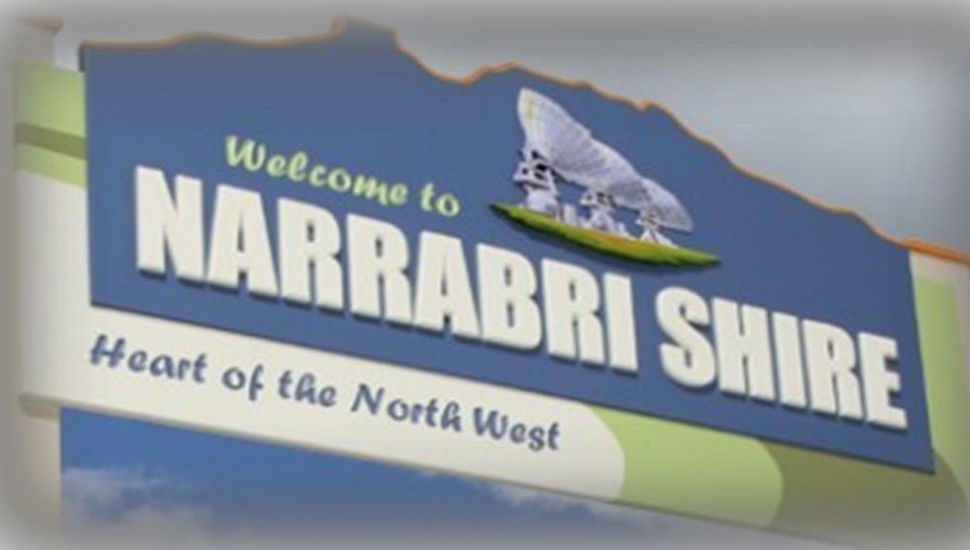


# Understanding local community expectations and perceptions of the CSG sector

Social Baseline Assessment: Narrabri project -  
Phase 2

Andrea Walton, Rod McCrea, Bruce Taylor, and Talia Jeanneret

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Gratitude goes to the research participants from the Narrabri shire who gave up their time and shared their insights for this research.

# Introduction

To increase our understanding of the social impacts of unconventional gas, this research project investigates a range of aspects important for understanding trust and social acceptance in relation to the coal seam gas industry sector in NSW. The project will also establish baseline measures of community wellbeing in a region affected by the pre-development phase of the industry. It uses the context of the Narrabri Gas project, which is an onshore CSG project in the Narrabri region of NSW currently in a pilot and appraisal stage of development and operated by Santos.

This report outlines the findings of Phase 2 research of the project. The aim of this phase was to understand and document community values, perceptions, concerns, and expectations of the CSG sector in the context of the Narrabri Gas project. This stage of the research also aimed to identify the factors underlying trust and attitudes towards CSG development. The next step in the project will be a telephone survey of 400 randomly selected residents of the Narrabri shire to establish baseline levels of community wellbeing and the factors important for supporting a social licence to operate. The findings from Phase 2 help to understand the foundations for a host community's acceptance if the onshore gas industry were to operate with the trust and support from the local community.

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## WHY UNDERSTANDING COMMUNITY PERCEPTIONS AND EXPECTATIONS IS IMPORTANT

Socially sustainable regional development depends on successfully aligning development with community values. Land can be used for multiple purposes including development of publicly owned resources.

However, to achieve development of resources that are acceptable to local communities and viable over the long term, it is necessary to understand community perceptions about the resource and its development.

Understanding community expectations and concerns helps to underpin government and industry decision making regarding policy, programs, and plans to develop extractive resources. Community support and involvement in decision making is important for achieving the most effective and acceptable outcomes.

## BACKGROUND: OVERALL PROJECT AIMS

1. To understand and document community values, perceptions, concerns, and expectations of the CSG sector in the context of the Narrabri Gas project [Phase 2]
2. To identify the drivers affecting trust between community stakeholders and the CSG sector [Phase 2]
3. To establish baseline levels of community wellbeing, resilience, and attitudes to CSG development in the Narrabri region prior to further CSG development, if it were to proceed [Phase 3]
4. To identify opportunities for collaborative actions that could be undertaken by community, government, and industry stakeholders to improve trust and to mitigate possible negative outcomes of CSG development if it were to proceed [Phase 4]

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## FOUR PROJECT PHASES

The project spans 15 months and is conducted in four phases

- **Phase 1:** Preparation and Planning
- **Phase 2:** Interviews and small group discussions
- **Phase 3:** Shire-wide survey
- **Phase 4:** Opportunities for collaborative actions

# Background: context for the Narrabri Gas Project

The Narrabri shire is located in north-west New South Wales, around 100km south of Moree and 100km north of Gunnedah and is approximately half way between Brisbane and Sydney. The town of Narrabri itself is located on the Namoi River at the intersection of the Newell and Kamilaroi Highways. The shire has a population of approximately 14,000 with around 6,000 living in Narrabri. Other smaller towns in the shire include Boggabri, Baan Baa, Gwabegar, Pilliga, Wee Waa, Edgeroi, and Bellata. Since white settlement, this area has been primarily a grazing and farming region. Irrigated cotton was planted near Wee Waa in the early 1960s, evolving to become the main high value crop in the region. More recently since 2012, a number of coal mines have been approved and are operating near Narrabri, Boggabri and Baan Baa, broadening activity in the shire. The Narrabri Gas Project, a proposed coal seam gas development is currently in the appraisal phase.

The shire's Strategic Community Plan reflects goals such as establishing attractive town centres with good regional infrastructure (e.g., roads, rail, airports, and industrial estates); improved health, educational and child care services; adequate and affordable housing; a safe, inclusive and involved communities; thriving local businesses and new industries; and sustainable and environmentally land-uses. At the time of writing this report, the Community Plan was being re-drafted with the Shire undertaking community consultation to assist the development of its future strategic direction.

## THE NARRABRI GAS PROJECT

The Australian energy company Santos is the proponent that holds the petroleum and exploration leases in which the Narrabri Gas Project is proposed (Petroleum Exploration Licence 238 and Petroleum Assessment Lease 2). At the time of data collection, the project was in its exploration and appraisal phase with approximately 60 wells in place; a water storage area and a water treatment plant constructed; and gas being transmitted to the Wilga Park power station approximately 8km south west of Narrabri. In February 2017, Santos lodged an Environmental Impact Statement (EIS) with the NSW Department of Planning and Environment proposing to develop natural gas in part of the geological area known as the Gunnedah Basin – the Narrabri Gas Project – approximately 20 kms south-west of the town of Narrabri.

The EIS indicates that the Narrabri Gas Project would be developed over 20 years with up to 850 wells on up to 425 well pads in the project area in and around the Pilliga. Gas related infrastructure would also be constructed in the project area including gas processing and water treatment facilities and related water and gas gathering pipelines. The gas would be made available to the NSW market via a pipeline connection to the existing Moomba-Sydney gas pipeline, which is a separate project being developed by the APA Group. The EIS information sheet for the Narrabri Gas Project, prepared by Santos, described the project area as “mostly (around 60%) on state land in a section of the Pilliga set aside by the NSW Government for uses including logging and extractive industries”. Santos also highlighted that the project area does not include National Parks or Nature Reserves; does not contain strategic agriculture land as mapped by the NSW Government; and that they will only drill on private land when the landholder agrees to host their activities.

# Exploring community concerns and expectations

In order to understand people’s perceptions about the unconventional gas industry in Narrabri, we conducted semi-structured interviews and small group discussions with stakeholders including community and government.

Drawing from previous research, we identified a range of variables that may influence trust and acceptance in the CSG sector. These variables represent potential factors to be explored and understood during the interviews and small group discussions and to be included and measured in the survey stage of the research. As depicted in Figure 1, the simple model helps identify factors affecting trust and social acceptance of the CSG sector, even though other factors may emerge from the study.

## Aims for Phase 2 of the project:

- To elicit local values in terms of aspects of community life that community stakeholders’ value
- ❑ To understand concerns and expectations regarding the activities or practices of the CSG sector
- ❑ To understand the roles and responsibilities of different stakeholders involved in CSG development
- ❑ To identify factors that underlie trust in the CSG sector and to understand perceptions of risk and possible benefits.

Figure 1 Simple model for understanding trust in the CSG sector



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## ETHICS REVIEW

All project procedures were reviewed by CSIRO’s Ethics Committee and ethics approval was successfully granted August 04<sup>th</sup>, 2016.

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# How we conducted our research

## PARTICIPANTS

A combination of sources were used to identify participants around Narrabri and Wee Waa for our research including a desk top review, the Narrabri Shire Community Directory, local lobby groups, and the Narrabri Project Community Consultative Committee. As part of our research procedure we conducted a short questionnaire to measure community participants' attitude towards CSG development at the closure of the interviews. Using these data, we incorporated a purposive sampling method to ensure a range of views and perspectives were represented in our sample. We also aimed to include a range of ages, gender, and geographical representation. We continued to recruit participants until we achieved a theoretical saturation, which means that no new ideas were being added to our data from the interviews.

In addition to community participants, six key informants were included in the sample, see Table 1. The key informants from the community, farming, local, and state government provided relevant background information, context to our findings, and triangulation of the data.

**Table 1 Summary of participants**

	Number of participants	Men	Women	Attitudes towards CSG development			Notes
				Strongly in favour	Strongly opposed	Moderate	
<b>Community participants</b>	<b>32</b>	16	16	9	9	14	<b>Interest groups</b> – People for the Plains, Yes to Gas, Saving Wee Waa, Narrabri Chamber of Commerce and Industry  <b>Occupations included:</b> agronomists, scientist, rural suppliers, farmers, local business owners, health care workers, child care and aged care workers, school teachers, retired school teachers, government service providers, local government employee, tradesmen
<b>Key informants</b>	<b>6</b>	4	2	NA	NA	NA	<b>Representatives:</b> Country Women's Association, Lower Namoi Cotton Growers' Association, North West Local Land Services, Narrabri Shire Council x 2, Environmental Protection Authority
<b>TOTAL PARTICIPANTS</b>	<b>38</b>	20	18				Narrabri and surrounds – 27; Wee Waa – 5; Key informants - 6

## PROCEDURE

We collected our data over three one-week field trips during September to November 2016. During that time we conducted 31 interviews (joint and individual) and held one small group discussion. The interviews and discussion group were recorded and transcribed and the data analysed using an inductive thematic analysis approach. All members of the research team participated in the data collection with the project leader attendant at all interviews and discussion groups. All procedures were conducted in accordance with ethical clearance.



# Findings

## 1 Local values

### 1.1 What people value about their local area

The interviews indicated six main aspects of the community that contributed to making Narrabri or Wee Waa a great place to live. These different dimensions reflected characteristics of the region and community life that participants valued. These values can be seen as underpinning people's views and attitudes about CSG development and are reflected in their concerns and perceptions of possible benefits of the industry.

- 1. Social aspects.** The social fabric of the shire was described as one of the main reasons that participants enjoyed living in the area. They described the importance to them of a close knit and supportive community even though at times there were drawbacks with everyone knowing each other so well. The diverse mix of citizen occupations throughout the shire also added to the vibrancy of community life and was valued by participants.
- 2. The local economy.** Participants described two main strengths of their local economy as being important to them. A strong agriculture sector particularly the cotton industry and the diversity of industries that were operating in the region. The cotton industry was perceived as cutting edge and innovative, viewed passionately by some as not to be put at risk. For many participants having a diverse local economy was described as important to them and regarded as a way of providing varied business and job opportunities and resilience to the region that extended beyond agriculture.
- 3. Services and facilities.** Participants spoke positively about the schools, medical and sporting facilities in the shire, the standard of these services and facilities, and how these largely catered for their needs. They also valued airline services and the connection this provides to state capital cities. However, some participants described a lack of facilities and activities for teenage children, the reduced access to specialist medical and disability services, and the lack of secondary school options as aspects of the shire that needed to be further developed. Participants also portrayed the local shopping precincts as struggling with some businesses closing their doors.
- 4. Natural assets.** The natural assets of the region were described by participants as important to their attachment to place as well as contributing to the region's agricultural productivity and success.
- 5. A country way of life.** Participants discussed the attractions of living a rural lifestyle, in a smaller community, and feeling connected to the bush. They also expressed the benefits that a country way of life can offer for bringing up kids.
- 6. The longevity and continuity of Narrabri.** Many participants described strong family ties, and the deep connection to agriculture particularly to cotton. Participants expressed feeling parochial about their towns and spoke with a sense of pride about a progressive cotton industry and the research centres located within their region.

**Table 2 Examples of quotes that describe aspects important to participants**

Value Dimensions	Description	Participant Quotes
<b>1. Social</b>	A close-knit and supportive community	<p>"Narrabri is small enough that you feel you know the majority of the population or the families within the population. So it feels like a close knit community" (CM2)</p> <p>"I love the small community. Everybody's ...not stickybeaking, but everybody shows concern and interest in other people." (CM3)</p> <p>"if someone's in trouble then the community rallies and helps people out" (CM4)</p> <p>"Everybody knows everyone, which can be a good and a bad thing. But definitely really friendly. Walk up the street and it'll take you an hour to get up the other end, because you see everybody that you know." (CM6)</p> <p>"My [spouse] died suddenly ... and it's amazing how the community rallies around you and you don't realise how good people are until something like that happens. The community was fantastic; the school was fantastic. .. it's that caring for each other, it's a very important thing of living here." (CM16)</p>
	Diversity of people	"I like the diversity of the people here. ...It's a town that's got a huge intellectual capacity, with research facilities, satellite stations. ...it ranges from highly skilled academic people right through the whole spectrum to farm managers and operators....It's just a good place to live and we are very happy here." (CM13)"
<b>2. Local economy</b>	Diverse local economy	"... sometimes if you're in smaller town situations you can feel a bit isolated and they're not very diverse but I feel that Narrabri is very diverse as in there's a lot of seasonal work opportunities for people with wheat and cotton and all the farming things. Also there's a lot of opportunities for people with the mining and the gas ..., so it's a diverse little place that has a lot to offer." (CM2)
	Strong cotton industry	<p>"We have hugely successful farmers here. I could take you to some of these cotton farms; it's space age. (CM29)</p> <p>"Narrabri has never been boom, bust ... this was the centre of cotton. This is where it started, in our shire. (CM27)</p> <p>"Agriculture is ... my passion and I've worked deeply in the industry and ... agriculture in this part of the world is as good as anywhere I've ever been. ...The cotton industry ...has been sustainable and hopefully that and all the rest of agriculture - it has to - stays sustainable for eternity." (CM22)</p>
<b>3. Services and facilities</b>	Schools, health services, sporting facilities	<p>"Well we're very fortunate that Boggabri has a really high level of service in terms of education and health, it's really good quality so we're really grateful about that." (CM25)</p> <p>"Schools ... are fantastic - we've got four schools, three primary and one high school. The school where my [children] go has a special unit for children with disabilities and I don't think it could be outdone by any city school." (CM20)</p>
<b>4. Physical assets</b>	Natural assets	<p>"It's a beautiful natural environment up here, we're blessed by a reasonably moderate climate, we've got fantastic local bushland, we've got the Pilliga, we've got the Nandewar Ranges. Agriculture is just vibrant." (CM19)</p> <p>"...one of the reasons I love Narrabri, is it's diverse in its natural attributes like soil and water and climate." (CM29)</p>
<b>5. Rural lifestyle</b>	A smaller place, great for bringing up kids	<p>"I love living in the country. Brought up in the bush, I have a strong connection with farming and agriculture and I just have a strong connection with living in the bush." (CM9)</p> <p>"I love the friends and the lifestyle and just the easy going way of living out here." (CM10)</p> <p>"It's a beautiful place to raise my children. I know what it was like growing up in Sydney in the '70s and '80s." (CM20)</p>
<b>6. Longevity and continuity of the region</b>	Family ties and a future for ongoing generations	<p>"I live here, I've grown up here, my kids have grown up here, some of my grandkids are growing up here. So I want the town to prosper and provide future for my kids and their kids. That's basically it. I want them to have the benefit of a country life." (CM30)</p> <p>"That's why I think Narrabri is so great, is because there's people that have been here forever and your family's here and you grew up here and you want your kids to grow up here. I think that whole family community thing is very important in Narrabri." (CM6)</p>

## 1.2 Concern for rural decline

The issue of rural decline was a concern expressed by most participants. Concerns that local employment opportunities were diminishing, that young people would leave, that school numbers would reduce, and that closure of services and facilities would follow were described. For example, a young female participant described her difficulty in finding work in the region and her plans for leaving Narrabri.

*“Unless you want to work at Coles or McDonalds you don't really have a great deal of opportunity. I think if you want to do an everyday job like that it's fine but to pursue something and train yourself in something there's nothing.” (CM5)*

Participants also indicated aspects of their town as struggling, particularly some retail businesses, and worried that such changes heralded a long term drop off in local shopping.

*“A lot of people [shop in Tamworth] ...it's sad really ...yesterday I went to Gunnedah ...on the way home, ... all I did was wave to Narrabri cars going south. So they shop out of town and the online thing is just probably a nail in the coffin” (CM30)*

Participants from Wee Waa particularly related their concerns for rural decline to the planned increases in the Murray Darling Basin water buybacks and how such changes will impact the economic viability of their local agriculture sector.

A mix of industries in the local economy was viewed as advantageous and as a way of preventing the decline phenomena, especially by those from rural backgrounds who had seen firsthand the demise of once vibrant towns.

*“I've always liked Narrabri as a town and I always want it to be a town too. If we don't get other industries in I just feel it's going to die like a lot of the western towns like Walgett, Coonamble, Bourke and places like that that haven't got any backup as far as an industry goes. I was born in Bourke ... It's just terrible to see it - it was a beautiful old pastoral town years ago - just to degenerate into a welfare town you may as well say these days, with a few pastoralists trying to hang on by their fingernails.” (CM26)*

A diversity of industries was also described as a way of offsetting the impacts of drought on the agriculture sector and the negative flow on effect drought brings to local towns.

*“Places like Wee Waa ...they're dying ...we've just been through a terrible drought and we can't have our eggs in one basket” (CM15)*

*“We cannot keep the town [Narrabri] going just on agriculture alone. [Because of] the droughts” (CM17)*

### **Five main reasons identified by participants as contributing to rural decline in their region**

1. Changes in agriculture practices, particularly in the cotton sector, reducing the opportunities for local employment
2. Reduction in the number of families that own farms
3. Impacts of drought
4. Changes in retail with the growing trend for online shopping and shopping in larger regional towns
5. MDBA plans to increase water buybacks in the region, particularly Wee Waa

## 2 Perceptions of coal seam gas

### 2.1 Perceived benefits of CSG development

#### Local employment and business opportunities

One of the main benefits of CSG development was the potential for increased local employment and business opportunities in the region. Even though local job prospects from CSG development were considered likely to be modest (20 – 50 positions), participants still described these levels as beneficial.

Participants described employment of locals by gas companies and other extractive industries as an important advantage of having diverse industries in the region, particularly as they perceived a drop off in the agriculture sector employment, which has been the traditional mainstay of employment for the region.

*“As long as they're employing local people they're going to be good for the town. Agriculture in this place is a huge, huge budgetary contributor. But even then, with the increasing automation of the agricultural industry they're employing less and less people. So anybody that is going to come into town, first of all, and employ people is going to be good” (CM30)*

Participants also explained the benefits provided to young people from having mining and CSG development in the region through the diverse work experiences and career opportunities that people in rural areas wouldn't normally get. For example, this 27 year old tradie describing the benefits of having Santos in Narrabri.

*“The benefits [from CSG development] is the employment that it produces within the town and the opportunities that it gives people. I have friends that have had no experience in that line of work before and have got into a position with Santos and gained experience that they wouldn't have been able to do here. So it gives them the opportunity of being able to move into an area that wasn't present here before, just career opportunities.”(CM2)*

Local business owners also described the opportunities for businesses in the region to become better quality businesses by incorporating new skills and new practices into their workplaces in order to undertake the gas related work. For one business owner who had worked in the gas sector, they depicted the benefits to their business as more than monetary gains but as an opportunity to undertake work that required meeting new safety and quality standards, something they were previously not exposed to in the agriculture sector, which they saw as a benefit more broadly to the Narrabri business sector.

*“The amount of changes the company I worked for had to go through in terms of health and safety and environmental practices to bring us up to standard to work out in the gas field.... That's one of the benefits ... It's not a monetary benefit but it's a benefit to the community that have worked with Santos to then implement these practices into your own business that definitely weren't there before.... Health and safety and environmental are such a big part of today. ... it's something that's really predominant in Narrabri now. ... It was a whole new world for us. Like nothing against farming, but it's a completely different situation. I'm not saying all farming. But if you spilt 20 litres of diesel on the ground, you don't ring the EPA ... Narrabri's such an agriculture based town, it was this whole new fresh way of doing business when Santos came” (CM28)*

## Boost to the local economy

Participants portrayed the local economy as stagnating over the past few years with the drought making things tough for rural based businesses. CSG development was viewed as a way to boost the local economy through flow-on effects to indirect jobs and spending, helping to maintain the population and a more vibrant community.

*"Things are just stagnant at the moment so we need something to really move it forward. We've had a real big drought here in the last couple of years. ... as the drought really took a toll on the community, businesses were saying look we're really, really hurting."(CM17)*

*"I'm pretty sure that most of the Santos employees here are locals, so they buy their boots and they buy their clothes and they go to Woolworths." (CM1)*

*"I think there's a domino effect isn't there? When you have locals employed and you have young families coming so that helps not only the commercial trade and housing and rent and all that ... But it also helps the Department of Education and enrolments. ..it's sort of affecting every avenue. .. otherwise [young families] they'd be gone. They'd be somewhere else looking for employment." (CM3)*

Compensation to farmers was also viewed as a benefit that would not only help keep marginal farms viable, especially through drought years, but also indirectly help the local economy as the compensation income filtered through the region.

*"farmers out there (in the Pilliga scrub) are saying look ... if we can pick up royalties from coal seam gas that's going to be our bread and butter, because when we hit tough times like they have done in the last couple of years, that's going to keep them viable. (CM17)*

*"I know a bloke [who's getting compensation], he's very happy. He's now drought-proof. He said my farming's better than it's ever been, I've got new fences, new machinery and he said .... there's no effect on my stock. He's got ... wells in his place and the ... wells combined would not take up any more room than this house does, as far as an imprint goes on his farm." (CM29)*

## Social investment into the community

Many participants described Santos's involvement in the local community as a positive contribution to the town. These local benefits from Santos were depicted in two main areas. Financial support to local services and facilities, and community involvement from staff and employees who add to the town's vibrancy.

*"They [Santos] have gotten into and behind the town, they support the schools, they support the local charities, they support the Lions Club and Rotary and anything going on in town. They're just a really good member of our community, and I'm not sugar coating it. It's just precisely the way I see it. " (CM30)*

*"The commitment that Santos has shown to supporting local businesses has been outstanding" (CM28)*

*"What does sway people is involvement ... and Santos do it quite well. They tend to merge their management into the community...and live here. I know most of them. They're all good people. They actively get involved in the community and I just wonder how much hassling they have to put up with when they go to the footy and they go to the pub - from a minority of the community. I know quite a few of them and they're terrific people. They get involved in the community."(CM13)*

Whilst some participants viewed social investment in the town with a degree of cynicism, describing it as ‘bribing’ the local community, others were pragmatic and described the financial benefits to local services and facilities as helping the town no matter where the money was coming from.

*“We've got the pool facilities in there. They were put in there by the mining company. Santos has put in lighting for the sports ovals and things like that there and continually sponsors all these things. ...you can be cynical - everyone saying well what's in it for them? Well naturally they want to get people on side but it's helping the town. That's the whole thing and I don't care how we get it as long as we get it.” (CM26)*

### **Wider societal benefits**

Participants described broader societal benefits such as extractive industries bolstering the Australian economy especially as other industries such as manufacturing are on the decline and need to be replaced. They also considered the value of CSG as a transition fuel and alleviating any future shortage of NSW gas as worthwhile. However, it was mostly participants with very positive views towards CSG that expressed the wider societal benefits as important. More prevalent, most participants deemed local benefits more important than the less tangible value that CSG might provide to society in general.

*“It's strange that people in other areas are going to benefit from something that's in our backdoor. We've got gas just out of town, [but] you can't buy it into your house.” (CM14)*

### **No benefits**

In contrast, participants with strong oppositional views towards CSG development regarded local employment opportunities as overstated, suggesting most ongoing jobs would not be locally based. They were also sceptical of any economic boost to local economies, and viewed community investment as “blood money”. These participants perceived no real benefit of gas to wider society, unconvinced that there was a potential domestic gas shortage looming, preferring renewables over fossil fuels, and not perceiving any real role for gas as an energy source.

*“Some definite clarity [is needed] - what they say is the Narrabri Gas Project will employ 200 people but then you find out half of them are bloody bean counters at the other end. Let's be honest “ (CM24)*

*“They talk about jobs and I believe the jobs are very temporary. There's only two or three years of jobs, and most of those people will be fly in, fly out, that come to construct it. There's probably... 20 jobs that will remain to monitor and do everything. ..Most jobs will be in the city because they'll relay it to there. ... for the amount of damage they will do,...It's such a small amount for such a short period of time. What are you going to do with the country after they're finished and taken the gas off. What are they going to do with it; you can't use it for anything”. (CM18)*



## 2.2 Perceived risks or concerns about CSG development

### 2.2.1 What are people's concerns and how do they vary?

#### Water is the main issue

In describing their concerns, issues related to underground water emerged as the primary concern. Participants described their reliance on water as a farming region and the possible threat to their viability and future if the underground water table were to be damaged in any way. Concerns for water revolved around the risk to water quality through contamination from interconnecting coal seams with water aquifers, and the risk to water levels through water depletion during the CSG extraction process. The potential impact on agriculture was cause for worry and concern.

*"This community is a very productive community, both in terms of food and fibre. Largely - the great volume of food and fibre is produced by irrigation, not by dryland, and if... well-managed, it's got the capacity to produce food virtually infinitely into the future. If that future got limited by the short-term production of hydrocarbons and gas I think that would be a tragedy." (CM13)*

However, there were differences in the way participants viewed these risks. These differences reflected beliefs about the integrity of wells, the capacity of industry standards and regulations to protect against possible industry damage to aquifers, trust in expert knowledge and Santos, and the extent of uncertainty around the science. As a result, differences emerged as to the perceived manageability of the risk and perceptions of possible catastrophic outcomes if something were to go wrong. These differences seemed to align with participants' differing views towards acceptance of CSG development. See section 3 for further discussion.

Participants also described their concerns for disruption to the natural systems of the Great Artesian Basin; for example, through potential damage to microfauna such as stygofauna.

*"the Great Artesian Basin recharge area is concerning ... I'm worried about this type of fauna, ....the stygofauna ... their function is to clean the water as it comes through and refills the Great Artesian Basin and also the other higher aquifers. So they're extremely sensitive and they're easily killed by changes to the quality of the water ... individual populations would be wiped out from any contamination and that would mean the filtering process can't happen anymore. So even aside from all the water that is pumped out during the process of getting the gas out. Even if we had to assume that it could be recharged again there's no way it would be recharged in the quality that is has been in the past - I just see it as too great of a risk to our assets, just an unacceptable level of risk." (CM25)*

#### On-farm concerns and future uncertainties

Participants also described their concern for local farmers, particularly that they be treated fairly, their rights protected, and that they not be badgered by CSG companies if they choose not to participate in an on-farm agreement. Even though participants described the footprint of the wells as not of major concern, and that there would be financial benefits to be gained by the farmer if gas development were to proceed, for some farmers there remained unanswered questions and uncertainties that were cause for their concern. Such concerns included, the impact on the future value of their property if they chose not to proceed with gas but were surrounded by farms that did, possible recourse if their groundwater was affected even though they did not have an on-farm agreement with a CSG company, and concerns about the safety and effectiveness of the decommissioning process. These types of concerns were unique to landholders and related to future uncertainties of farming a property nearby to CSG developed farms,

but not affected directly by the CSG development itself. Such concerns were not generally expressed by town-based residents.

## Fracking

The need to frack in the Narrabri region has been dismissed by the CSG proponent due to the underlying geology of the coal seam beds. Participants recounted the relief they felt when they learned that no fracking would be required. For many participants their concerns had been largely eliminated; however, if this were to change then their views towards CSG development in their area would be reconsidered and potentially change as well.

*"I know there's been all these protests and there's been people saying that it's going to wreck the water table. People are very concerned about fracking, but we actually went on a Santos tour to have a look at what they were doing. They took us out and they are saying that they're not doing any fracking ... [I would have been worried about] contamination of the water table.... A lot of reports that you hear from overseas and also from Queensland about people that have gone into coal seam gas. That the fracking has damaged the water table and made the water not usable...[that would have been of concern to me]" (CM16)*

On the other hand, some participants remained sceptical that fracking would never be used and that if not used initially would be used at a later date when the gas was potentially more difficult to extract from the coal seams. These individuals described the potential for fracking as one of the main reasons underpinning their negative views towards the project.

## Location of the wells

Locating the majority of the wells in the Pilliga forest was largely viewed as a suitable place for development by those participants who were accepting of coal seam gas development. They depicted the Pilliga as scrub and "goanna country", with poor soil and limited ability to support any viable agriculture. Even though, some participants were concerned about the impact of development on habitats and biodiversity in the Pilliga, more commonly participants described CSG as a way of making the Pilliga "more useful". However, when it came to locating wells on prime agricultural land all participants were unsupportive, not "seeing the sense" of putting prime farming areas at risk.

## Indirect risk to agriculture

Even though the direct risks to agriculture related to peoples' concerns about water impacts, potential indirect impacts were also described by some participants. Concerns were raised that farmers who currently use groundwater for irrigation may be required to adopt some of the more stringent standards that are being used by the CSG industry in managing their bores. This could potentially add a layer of cost and managerialism to agriculture that has previously not been there.

*"The other impact [to agriculture] ... is that the irrigation industry also puts bores down and it also has the risk of contamination and cross-contamination of aquifers and well integrity. ... there is an impact on farmers should the requirements for due diligence and management of those wells [includes] farmers as well. It is probably true to say that the governance of wells for agriculture are not as high as the governance of wells for gas. That also said, they're nowhere near as deep ... [but] there's probably a potential risk there to the growing community". (CM13)*



## Other concerns

Other concerns were expressed but not nearly to the same extent as those around water. These included the impact on the biodiversity of the Pilliga forest, potential for fire from the wells, boom-bust impact on the towns, social changes from DIDO - FIFO workers, possible health issues, salt or brine management, and changes to the rural landscape such as increased dust, noise, and traffic (see Appendix A). However, in contrast to water, these concerns were raised by fewer respondents.

Some participants described possible social and community impacts that might arise from cumulative effects from the extractive industries especially on the communities that were already experiencing coal mining development. For example, a participant who lived near the smaller town of Boggabri raised concerns for the potential collective impact of large numbers of FIFO workers from the mining and coal seam gas on community participation and possible boom-bust type effects.

*"I think [the FIFO impacts] that's particularly concerning here [at Boggabri] because of the cumulative impact of the gas as well as the mining. We have a lot of mining activity ... so Boggabri has a population of 950 people and at the moment there is an 850 man camp there. So essentially in theory it's doubled the population of Boggabri and there is no management for that, there is absolutely no management at a community level of the impacts of that. You cannot tell me that you can double any population and not create impact. ...It's not just gas but I can see those impacts multiplied by gas because it will be the same thing, especially this whole massive construction phase kind of thing. Then the plummet afterwards which is what we've just seen with the mining. It's just such a shock to a relatively stable and resilient system and you get these massive shocks and these massive troughs. Communities cannot adjust and if there's no management they really can't adjust to such big changes." (CM25)*

## No concerns

In contrast, some participants expressed no real concerns at all, satisfied that risks were capable of being managed by industry best practice, regulations, and monitoring. These individuals described trusting Santos, experts, and government, and generally had a positive view towards the notion of CSG development in their region. There didn't appear to be any sociodemographic or locational pattern, rather these participants were from mixed occupations and locations. Many of these individuals described being concerned and sceptical in the beginning about the proposed CSG development but that their worries were appeased through the process of finding out more information and learning about the gas extraction process and its risks.

*"Our area relies very, very heavily on water, both river water and underground water for irrigation and, in fact, the town's water supply comes from underground and down in the aquifers. So yes, I would be silly if I wasn't concerned, and I am concerned and I was ... I was concerned but I'm not so concerned now. ... Their practices for actually drilling and installation of the actual pipes themselves ... - they obviously satisfy engineers and not being an engineer myself I've got to rely on their expertise, which I have done, and I think that enough people have had a look at it and said that they're safe practices, or that they're not. ... I'm happy enough with their practices. If I've got a question I'll go up and ask them or they will give me a source to read about it." (CM30)*

## 2.2.2 What shapes people's concerns and perceptions of risk?

Perceptions of concerns and risk aligned with people's views towards CSG development. Those that had more positive views towards development viewed risks as more manageable and less catastrophic in outcome if something were to go wrong. Whereas, people with more negative views towards development saw risk as unmanageable either because the science was unclear or those undertaking the activities were untrustworthy, or both. In addition, those governing the sector were perceived as unable or not to be trusted. The perceptions of risk seemed to be largely shaped by three main aspects:

- Source of information and level of industry understanding
- Trust in experts, information sources, companies, and government
- Previous experience including interacting with the CSG industry or other extractive industries, working with large companies that work with the sector, or working in an industry where there are high standards associated with environmental protection. In addition, **experience with the cotton industry** and its development also influenced the way participants perceived risk. They believe that the CSG industry will similarly progress and reduce its risks with technology improvements and good governance.

*"I put it in relation to the cotton industry 30 odd years ago, when I came here we used to spray 15 to 20 times with insecticides over the cotton crop. We would annihilate everything, tail water off the irrigation blocks would run back into the river, would contaminate the river, issues like that. The cotton industry was very proactive and addressed all these issues because the community could see what was happening and I personally saw what was happening. Then over time with technology things changed and the cotton industry has got really good governance now. I put that in relation to what's happening with gas extraction. So, over time different technologies, and things change, you learn from your mistakes." (CM17)*

Proximity to the risk doesn't necessarily account for differences in perceptions of the risk. The data indicated that people who live near or work near CSG infrastructure, or may in the future, do not automatically perceive higher levels of risk. Even though some of those who are near CSG infrastructure may see proximity as one of their major drivers of risk perception, people who live a long way from CSG infrastructure can also perceive risk as unacceptable.

### Learning about CSG and the Narrabri Gas Project

Participants described different ways in which they learnt about the proposed project. Four main ways of learning were identified in the data including: sourcing information on the internet; word of mouth and talking to people in their social network; attending information sessions, hosted by service clubs, Santos, local Chambers; and attending a CSG site visit. For many participants 'seeing was believing' with site visits proving to be a very effective way of becoming more informed about the industry and understanding "what was going on".

Participants described wanting to know about CSG development because they were interested in anything that affects the future of their town.

*"Narrabri is very parochial... anybody that is serious about liking Narrabri and wanting the best for Narrabri they will look into it, and indeed, a lot of them have." (CM30)*

Many individuals indicated they were wary of information purported by groups with extreme views and many wanted the opportunity to make up their minds for themselves.

*".. the people who are so passionate one way [make it hard] - I've been to a couple of community forums. The people who are against coal seam gas are so against it and will not*

*listen to anything else about it. Then the people who are for it just say all of that's unfounded that there's no trick behind it. You never know what's accurate." (CM31)*

*"There's heaps of information, but one mob that's against , it's going to be against it, and one lot's for, so you go to either side and get both views and go from there - I'm just [forming] my own view - without worrying about what other people are thinking." (CM8)*

Many participants expressed feeling initially sceptical about the industry but that over time and finding out more information their concerns were satisfactorily addressed. On the other hand, some participants reported that the more they found out the more they were concerned about the industry. Many of these people indicated the negative experiences of the United States and Queensland as shaping their views.

Some participants described not being very informed or very involved in the discussions around CSG development. These participants indicated feeling satisfied with their level of knowledge and provided a range of reasons for their current level of involvement, often relating to other priorities in their lives. Many of these individuals indicated they relied on social and popular media for their information.

However, some participants described getting more involved if something were to go wrong such as an environmental breach.

*"If I heard that there was some sort of incident or breach that affected the environment, then I definitely would want to try and find out [more information]." (CM2)*

## 2.3 Trust – building or undermining trust in the sector

### 2.3.1 Building trust

#### Perceived competence and reputation builds trust

When people perceived high levels of competence in an entity's performance they were more trusting of their activities. Participants described Santos as leaders in the industry and viewed their management of legacy issues that were created by Eastern Star as evidence that they were capable of safely managing the CSG industry and committed to good environmental outcomes. Technical competence and company reputation helped to build trust in the eyes of many participants.

*“if the government said, we're not having any of these fossil fuels pulled out of our grounds anymore, Santos are the type of company that will go, okay then, well we're going to keep our company going and we're going to start doing renewable energies. Because they're industry leaders in what they do.” (CM2)*

*“Eastern Star made a lot of stuff ups, and Santos had to spend millions of dollars trying to clean up Eastern Star's problems. ... It cost them millions of dollars and I suppose the public image was that oh look at all the issues - we don't want coal seam gas, but Santos are different.” (CM17)*

#### Confidence in rules and regulations

Many participants described feeling confident in government to adequately ensure the industry is appropriately governed, expecting that there will be sufficient regulations and guidelines in place to make the industry safe.

*“If they didn't have regulations to work by, yeah, I'd be a lot more worried, definitely.... But if they work underneath the same guidelines as what the mining industry is then they get fairly heavily audited and yeah [I'm ok with it].” (CM2)*

Even participants who held a fairly dim view towards government in general described their confidence of government to satisfactorily regulate the industry in part because they believed government would be highly scrutinised by activists. Some individuals also described the recent government reviews of mining exploration licences as probably resulting in a more robust and transparent system.

However, those participants with a very negative view towards CSG development indicated no real confidence in government's ability to effectively monitor and ensure regulatory compliance of the industry largely because all parties could not be trusted.

#### Company relationships with the community

Openness and honesty from the beginning were described as helping to build trust and was considered integral to an ongoing relationship with the community. Preparedness to become part of the town – buying a house and moving families to the region, also helped to build trust acting as indicators to the community that the company were committed to being part of the community going forward. These families were valued by their local region with many participants regarding them as good people who had contributed to the social fabric of the town in a good way.

#### Trusting the experts

Many individuals expressed high regard for expert knowledge and were prepared to trust engineers and “the science” in CSG related matters. These participants acknowledged their own lack of expertise in these areas and respected judgements of those more knowledgeable, prepared to default to their advice.

*“After a lot of rain one of the settling ponds had overflowed ... and they self-reported and they fixed the problem. The EPA doesn't have a problem with it. So on the basis that they're greater minds than mine, I have to trust their knowledge in what they're doing... you've got to, haven't you? Anyone that knows more than me you've got to respect their opinions.”*  
(CM30)

On the other hand, some people were sceptical of experts and the science, particularly if they viewed their input as lacking independence. These evaluations of mistrust did not seem to relate to the quality of the data or the robustness of the science, rather the science was discounted if the research was perceived to be connected to government or industry funding because of perceptions these groups are pro-development. In many such instances there was a preparedness to believe or trust an alternate source that supported a particular view, even though there seemed to be little regard for independence of the alternate source or the quality or robustness of the science that had been undertaken.

### 2.3.2 Undermining trust

#### Perceptions of deceit and lack of transparency

Participants described their trust being broken if Santos were to undertake some sort of illegal activity, breach their industry standards, or contravene government regulations, particularly if this was in relation to the environment. Moreover, if these activities were done knowingly or if they acted to cover up mistakes, trust would be eroded and acceptance of the industry impaired.

*“If Santos did something that was bad, negative, that impacted on our environment, our town, our people, and they hid it. If they'd done something unintentionally, but they tell us about it, okay, that's - people make mistakes. Companies make mistakes. Things happen. But if they rectify it, they tell people what happened and why and everything's transparent, then that's okay. But if they do something intentionally, or they do something unintentionally and nothing's ever said and it's covered up, that would be negative. That would make me feel like I would lose trust and not be confident in going forward into the future.”* (CM12)

#### Wariness of big companies – even when people on the ground are trusted

Participants described a sense of caution in completely trusting a company like Santos due to a general distrust of big companies. Even though the individuals on the ground may be trustworthy and acting in a way that generates trust, people are wary of big companies making decisions that are beyond the control of the local representatives. For example, one participant described her wariness of corporate behaviour.

*“[I trust Santos] to a degree. They're a big business. Their main game is making a profit, so not everyone in Santos is going to have morals and ethics and - there'll be, I suppose, some parts of that business that won't 'give a shit' - pardon my French - about Narrabri as a town. It's just moneymaking. But there are people on the ground that I've met... and they seem like great people, and they might look out for our needs as well. I suppose there's only so much say they have in regards to the company, so I'd be wary of fully trusting anybody”*  
(CM12)

Contradictory company announcements also undermines people's trust in a large company's future behaviour, even if these announcements occurred in the past. For example, one participant who was sceptical about the planned size of the CSG development remaining at 850 wells described publicly available company plans from 2014 as more realistic indicators of the future scope of the Narrabri project.

*“The other thing that concerns me is that we've got documents from Santos shareholder meetings [October 2014] where they have promoted seven gas fields across North-west,*

*this Narrabri gas field is one of those seven. Of course they hold the petroleum exploration licences for that whole region. So I don't believe for one minute that there'll only be 850 wells if they have their way. ...They're telling people what they think they want to hear. So they know their investors want to hear that it's got great potential and it's going to be a big money earner, so that's what they tell them. They tell local people that it's only going to be a small development and to not worry about it. That's just the way they act.” (CM25)*

### **Corporate community support versus marketing**

Excessive sponsorship was described cynically by some, with support for local community viewed as a marketing exercise. Prolific corporate sponsorship undermined their trust and was viewed as trying to “buy community support”. However, not all participants described Santos support as self-serving, rather they were appreciative of their generosity and viewed their activities as an indicator of their level of commitment to the community. Others were pragmatic and could see that it potentially was a type of marketing activity, as well as building a relationship with the community, and were undisturbed by the extent of Santos support. They felt the town was better for the corporate support that had been extended to it from the various extractive industries in the region. Generally, corporate support of community clubs, activities, and facilities was viewed positively.

### **Not feeling heard or listened to**

People who held extreme oppositional views towards CSG development expressed frustration that their concerns were not being listened to and that local knowledge not being taken up. Such sentiments minimised their trust in the sector and extended to stakeholders beyond the CSG companies including the EPA, government, as well as CSG proponents.

*“The management of salt [is a concern] but it goes deeper than that. We're told one story ... and when we raise concerns about it we're said don't worry about it .... it's patronising behaviour by bloody governments and gas companies....Nobody will listen to us.” (CM24)*

### **2.3.3 No trust**

Some participants described having no trust in the sector at all including CSG companies, government agencies, experts and science linked to government or industry funding, and limited trust in community members that heavily supported the industry. This lack of trust underpins perceptions of possible benefits and risks, rendering benefits as minimal at best, and risks as potentially catastrophic, not able to be safely managed. These participants expressed strongly oppositional views about CSG development and efforts to build trust would seem difficult.

### **2.3.4 Previous experience in the extractive industries and trust**

Previous personal experience in the mining sector, or with big companies that have to follow environmental regulations can help to build trust in the system. It allows someone to see ‘firsthand’ how a company follows stringent regulations and undergoes monitoring of their operations, which contributes to them being more accepting of the industry.

*“I've worked out at Boggabri Coal ... and I know firsthand that they go way above and beyond what the [government requires] - because they don't want any chance of being shut down. So they always go above. .. I haven't really had any direct contact with Santos before. ... it was the experience that I've had working in the mining industry ... working underneath strict guidelines. I know that companies like that do go above and beyond what they're asked of. So that's why I feel comfortable.” (CM2)*

Previous experience also helps to show possible benefits and opportunities from having an extractive industry based within a local economy. Participants described the benefits that they had experienced in other towns where local employment had been bolstered from nearby mines or gas.

*“I'm all for gas because from the Hunter Valley I was brought up with [mining], so I think it's just going to be a good thing. I think it's just going to bring more jobs for the town” (CM7)*

On the other hand, if the previous experience has been unfavourable then it raises concerns and issues for people. One participant described their previous experience with gas development in Queensland and not wanting that to be repeated around Narrabri.

*“I saw the impacts firsthand, and I guess when we moved here I just thought I do not want to see that happen again in my own backyard. ...My concerns are about the industrialisation of rural areas and how you don't get a choice in that industrialisation, it happens incrementally so that you don't notice it until you look back and go wow, what happened there? So particularly just the increase in traffic, dust, noise and visual amenity. Those were all the impacts that I saw at Roma and also the FIFO what happens to a community that is heavily influenced by FIFO.” (CM25)*



## 2.4 Expectations

### 2.4.1 Expectations of the operator

If the Narrabri project were to proceed, participants described the importance of Santos continuing to act as they have been in relation to local jobs, and supporting the local community. Their expectations were: to employ local people, contribute and be part of the local community, keep people informed, and be honest and transparent.

*“Supporting the local community that’s a major thing [I’d be expecting] and employing people locally as well.” (CM2)*

*“Making sure that Santos are doing everything they can to let us know how they reduce those risks of [water contamination] from happening, sending that clear message, ... - not just fobbing us off, but being detailed with this is what could potentially happen, this is what we’re doing to make sure we reduce that happening...[being] open, lots of transparency, .... People out here don’t like to feel like the wool’s being pulled over their eyes. Their traditionalists and they like to feel like they’re a part of it.” (CM12)*

People also expected the operator to follow all environmental requirements and to conduct their activities according to world’s best industry standards. Some participants described a tolerance for future mistakes as part of “being realistic “. If this were to occur they would expect a totally transparent response from the CSG company, the Environmental Protection Authority, and government that was immediate and appropriate.

### 2.4.2 Expectations of others

Participants described the importance of good governance. This extended to expectations of setting and maintaining standards in the way CSG companies affected the local region socially and environmentally. They also expected government would ensure an effective rehabilitation process post-closure of wells.

*“I’d expect that [Santos] revegetate when they finish ...knowing the government it’s not going to let them do stuff without fixing it up afterwards” (CM8)*

The role of local council was viewed as one of fairly representing all of its citizens with the emphasis being on all citizens. Some participants expressed concern that the council at times appears too much in favour of proceeding with gas, equally there were others who were concerned that the newly elected council may not represent all citizens and may be “running their own agenda” obstructing future development initiatives such as CSG development. The strongest theme evident in the data was that local council was there to help ‘safeguard’ the community and to fairly represent the interests of all of its citizens. Participants indicated that the council was a place that could act as a ‘neutral’ link to unbiased information sources for those individuals who were wary of information espoused by either protest or pro-gas groups.

### Fairly sharing the costs and the benefits

Participants also described the importance of distributional fairness of the benefits. They explained they would like to see the region get their fair share of the gains.

*“they’re here in our town - most people are happy for them to come to the town and do what they’re going to do, but on the proviso that they’re going to add to our community. We’d like to make sure that there were fair gains happening from what they [Santos] were gaining.” (CM12)*



Many participants also viewed the risks and benefits as being borne unevenly with people in large cities experiencing the benefits of cheaper gas and local communities bearing the risks. Such perceptions underpinned the importance and expectations that there would need to be significant local benefits.

## 3 Differing views: ‘Strongly in favour’, ‘Strongly opposed’ and more ‘Moderate’ views

The data indicated that acceptance of gas development in the region varied from ‘strongly opposed’ to ‘strongly in favour’ with a group in between reflecting a less polarised stance. Participants with ‘strong’ views appeared less open to being swayed by information contrary to their existing view on CSG development, while participants with ‘moderate’ views appeared more open to new or additional information. Some participants who held moderate views were undecided or unsure about CSG development.

Drawing from the earlier model of trust and acceptance depicted in Figure 1, we identified differences in the underlying drivers of people’s acceptance and propose that differences in perceptions of these factors account for people’s differing views of CSG development. This section describes these factors in terms of three differing segments of acceptance about CSG that emerged from the data – ‘Strongly in favour’, ‘Strongly opposed’, and ‘Moderate views – Yes / No / Maybe’, and Table x summarises these differences.

### 3.1 Strongly in favour

- Focused on benefits, motivated mainly by local benefits but also wider societal benefits as well
- Concerned about rural decline and see a diverse local economy, beyond agriculture, as a way of building resilience into the region
- Don’t view agriculture as providing the employment and business opportunities to the local region like it once did
- View risks as manageable through best practice industry standards and good governance
- Trust experts and the government’s ability to monitor and manage the industry
- Trust Santos
- More prepared to accept findings from government, industry, and Australian research institutions as trustworthy
- Have gone to great lengths to learn about CSG
- Many started out as sceptical
- Liked CSG development to the early experiences of the cotton industry
- Aware of the Community Consultative Committee (CCC)

### 3.2 Strongly opposed

- Focused on risk
- See risk as unmanageable, potentially catastrophic outcomes, latent uncertainties are unacceptable
- Sceptical of benefits
- Little trust in experts or research remotely connected to government or industry funding, little trust in processes for maintaining independence of research findings
- Learn about CSG from a wide range of alternative sources
- Have gone to great lengths to learn about CSG
- Many started out with an open mind

- Little trust or confidence in governance processes for monitoring or regulating the sector
- Little trust or confidence in activities such as the CCC
- See the CCC as perfunctory and not listening to all sides
- Don't see a role for gas or other fossil fuels, focussed on renewables, don't see gas as a transition fuel, and question whether there is a domestic gas shortage

### 3.3 'More moderate views – Yes / No / Maybe'

This group represents people with a range of views and different levels of engagement with the topic. It encompasses those who are very engaged with the issue, feel informed but hold a more moderate stance which could be either moderately positive or warily negative, or alternatively unsure at this stage, and yet to establish a firm view. In contrast, this group also contains those individuals who are not engaged with the issue and don't wish to be for a variety of reasons, including personal commitments to other aspects of their lives, or resisting feelings of pressure to form a 'strong' view. Such individuals described accessing information through the popular media and social networks, and they hold varied views accordingly.

- Commonly see benefits outweighing the risks
- Wary of risks but have confidence in regulations
- Wary of biased information
- More open to additional information
- Many have gone to great lengths to learn about CSG, whilst others have not engaged in sourcing information
- Often unaware of the CCC

### 3.4 Polarised views and community cohesion

Although some participants from the 'Strongly opposed' and 'Strongly in favour' positions described the community as being polarised and fragmented around the issues of CSG development, participants who held more moderate views reported they did not feel that the community was divided. Rather they described being aware that there were extreme differences of opinions but that these segments were the minority, and for most people, they felt it was business as usual.

However, some participants from the 'strong' views described the other as maligning their views and each described examples of feeling bullied. This resulted in high levels of stress for some participants with strongly held views. They also accused the other of using figures and data that are not accurate, biased, and only chosen because they support their respective views. In some instances, participants described the practice of boycotting whereby individuals apparently did not support certain businesses because of their purported position on CSG. Any pressure to adopt a polarised 'Yes' or 'No' position was not welcomed by many individuals who described themselves as having more moderate views, even if they were tending to be more supportive of a particular stance. Rather, they described the desire to be able to make up their own minds for themselves and to be free to be unsure or undecided about CSG development.

**Table 3 Differences of underlying drivers based on three attitudinal segments of acceptance**

	<b>Strongly opposed</b>	<b>Moderate views (moderate No, Yes, or unsure)</b>	<b>Strongly in favour</b>
Benefits and risks	Risk focussed	Benefits generally outweighing risks	Benefit focussed
View of risk	Risk as catastrophic	Risk wary	Risk as manageable
View of benefits	Sceptical of possible benefits		Motivated by concern for rural decline
Rural decline	Primarily see agriculture as sufficient for local economy	Witnessed changes in agriculture, concerned for future viability of the town, see a diversity of industries as a good thing	Witnessed changes in agriculture, concerned for future viability of the town, see CSG important
Trust experts	X	✓	✓
Aware of the CCC	✓	Largely Unaware	✓
Feel well informed	✓	Self-rated knowledge levels vary	✓
Want to engage	Very engaged	Engagement level varies, perceived pressure to take a polarised view discourages more involvement, other personal priorities compete for their time	Very engaged
Polarised views	Concerned that fragmenting the town Feel bullied and maligned by the 'Extreme Yes'	Aware of divergent views, no concern that it's fragmenting the town, don't like feeling pressured to take a Yes / No position	Concerned that fragmenting the town Feel bullied and maligned by the 'Extreme No'

## 4 Key messages

### 4.1 Address perceived risk through industry best practice, good governance, high levels of trust, and robust science

Perceptions of risk vary and align with differing views of acceptance. When people described risk as acceptable they largely described it as manageable risk, managed through industry standards and good governance. High levels of trust in all parts of the sector underpin people's confidence in the sector to adequately manage risk now and into the future. Robust and independent science that addresses environmental issues particularly around water contributes to people's trust, knowledge, and their confidence in the industry. Research updates and review papers on the latest research in key areas of concern would help to dispel myths or inaccuracies that develop to fill knowledge gaps. Whilst not all knowledge gaps can be addressed simultaneously, research updates which show progress in filling knowledge gaps over time can engender trust in the industry.

### 4.2 Latent risks and uncertainty over time are a particular concern

Even though water is the number one issue of concern, risks that could emerge over time are worrisome to those who are against CSG and those who are unsure. These concerns are particularly important for land holders whose future challenges differ from those who live in nearby towns.

Such risks include the following:

- Possibility of Santos leaving or becoming insolvent or being taken over by a less trusted company
- The responsibility for problems that may emerge in 20 or more years' time
- The possibility of needing to start fracking in 10 years' time as well production diminishes
- The possibility of extending CSG development into other areas
- The lack of information and industry experience with decommissioning

Even as the science surrounding current issues such as well integrity, connectivity, and impacts on water become better understood, the focus of people's concerns shift to the uncertainties and latent risks associated with industry legacy issues. Information and science targeting these areas would help to address concerns for those individuals still unsure about industry legacy issues, and allay worries of those who have their farms affected by CSG development and who are also considering the next generation of farmers who will have to manage any unresolved issues.

### 4.3 Rural futures – thinking long term

The development of CSG, as an issue, is deeply tied to residents' ideas about planning for the region's and town's future and their vision of that future. Concerns for the future and potential rural decline proved to be both a positive and negative driver of acceptance for CSG development. As a positive driver of acceptance, extractive industries were viewed as a way of building increased resilience into the region with a mix of industries in the local economy perceived as providing a future for their town and preventing decline. Continual change and innovation was seen as necessary to keep local towns alive, and maintaining a static or business as usual approach as contributing to a town declining.

*“There's a lot of things I don't like about extractive industries ... but I think if a town is going to survive it's got to have diversity.” (CM28)*

In contrast, as a negative driver of acceptance, CSG and the extractive industries were not seen as the solution to preventing long term rural decline. Rather, participants who held these attitudes viewed their region as agriculturally dependent and that industries like cotton represented a sustainable future for their region, one not to be put at risk through the introduction of the CSG industry.

Furthermore, unlike agriculture, the extractive industries were viewed by some as short term. The 20-30 year life of the extractive industries described as short lived and not providing continuity for the communities in the region. In contrast, agriculture was viewed as always being there providing continuity to farming families and the economy of Narrabri. These sentiments were expressed by those participants who were connected to intergenerational Narrabri families, or who had lived in the area for decades. The 'continuity' of Narrabri was valued by these individuals who described the extractive industries as not demonstrating true commitment to the longevity of the region because "they will come and they will go".

*"We've been here for this long. You're only here for a very short term. You're only here for CSG. You're not here for anything else. You're not here to be a part of the community. You're not here to live here. You're not here to be - to bring your kids up here. You're here from Adelaide, for CSG, for this contract, - I just don't think that they understand. Or want to understand." (CM6)*

*"These bastards that are coming here now just want to come and exploit it, 20-odd years they're going to be gone and they do not care. (CM22)"*

There is scope for organisations, like local governments, to help position the CSG debate in the context of broader local and regional plans and explore where CSG development supports and/or places at risk different values and goals in those plans. From here different responses or investments could be developed with the community to enhance benefits or mitigate risks that are consistent with the community's vision of the future. If CSG development were to proceed ensuring there was tangible benefit that was enduring beyond the project could be one way to support the continuity of Narrabri. This could include major infrastructure that contributed to regional development and the future viability of the shire.

## 4.4 Learning from the cotton industry

Even though the cotton industry was seen as more sustainable over time, early experiences with the cotton industry also seemed to shape people's perceptions of CSG development. People likened CSG to the development of the cotton industry and the improvements they have witnessed in the cotton sector over time. As locals in a cotton growing region, they had witnessed the effect of regulations to improve safety and environmental impact in the cotton industry, and agriculture more broadly.

Possible solutions for improving trust, particularly with farmers, could potentially be drawn from the cotton industry and the way the industry improved its relationship with its host communities. The idea of Best Management Plans (BMPs) was suggested as a way of improving trust, demonstrating commitment from the CSG companies, and working towards continual improvement in industry standards and on-farm CSG company behaviour.

## 4.5 Encouraging respect for differing views and community cohesion

Participants described the pressure they felt to take on a polarising yes or no view to CSG development. When individuals felt pressured they also described feeling angry and resentful. Many expressed the desire to be able to make up their own minds about CSG development, on their own terms, and in their own time. The pressure to adopt a particular position encourages people to avoid those who do,

potentially laying the foundation for reduced community cohesion. For example avoiding long-time acquaintances in the street for fear of being badgered about CSG development. Some small business enterprises also described the pressure they felt when asked by lobby groups to indicate their public support or not for CSG development. They indicated that their views were their own private matter and that they were not in favour of doing something that might alienate themselves or their business from any part of the community. In contrast, many other participants described the “agree to disagree” approach with friends and acquaintances as an important and effective way of respecting each other’s views and avoiding conflict.

However, some participants who were concerned about the possible impacts of CSG without holding strong views against gas didn’t want to be pigeon-holed as a ‘protestor’. They described feeling underrepresented and were unsure where to go for neutral information or where to take their concerns.

Promoting a community culture whereby holding different views is seen as fair and reasonable, including feeling free to have moderate or undecided views, is important for maintaining community cohesion. By increasing the community’s awareness that differences in opinion about CSG exist and that it is ok for people within the community to hold a range of views may help to alleviate social pressure on individuals and promote respect for differing views. Encouraging a culture of perceiving local business enterprises as separate from business owners’ personal views on CSG, discouraging the practice of business boycotting, and supporting local businesses to avoid the pressure of having to align with any particular view, would also help to maintain community cohesion.

## 4.6 The CCC information is not reaching everyone

Some people described being aware of the Community Consultative Committee (CCC) and receiving information through their respective representative. Others described being aware of the CCC through the local media but not hearing about any CCC outcomes largely because they were not a member of a representative group. However, more prevalent was the view that people were both unaware of the CCC and any associated outcomes. Nobody described going to the Santos website for CCC information. However, people who were members of a group represented on the CCC described receiving information through their respective group and being satisfied with knowing what was going on at the CCC.

Those individuals that described themselves as not wanting to get too involved with the issue of CSG expressed seeing the benefit of the CCC and the reassurance it gave them that it exists. For example, when the researchers described the function of the existing committee to a participant who was unaware, the participant described it as an excellent body for helping to ensure unbiased information is circulated.

*“[That committee sounds] excellent. That’s exactly what I was thinking but I didn’t know that that existed.” (CM12)*

Augmenting existing distribution channels would help disseminate CCC information to those individuals in the community not directly represented by a formal group. Participants suggested possible avenues of communicating CCC activities to them. These included:

- Utilising the local newspaper more
- Social media - having a Facebook page where everybody can post questions and receive the information directly.
- Proactively disseminate information to interested social networks possibly by newsletters
- Expanding local council’s role as an information source

## 4.7 Unbiased information neutrally delivered is important

While the CCC is an important source of local information on the Narrabri Gas Project, participants described the importance of unbiased information. People were wary of information that other people used to support their own view or position about gas. Participants described wanting access to unbiased information so that they could make up their own minds. Some saw the local council as potentially having a role in this space, as acting as a portal for accessing links to different information sources.

*"[The council] is a place where we can all go to start to get a basic idea of what's going on ... It's like a central hub [for information] ..." (CM7)*

## 4.8 Benefits need to be local to be highly valued

Local benefits were considered more important to shire residents than wider society benefits. Participants described the importance of benefits being local to the Narrabri region. This view extended to the possibility of supplying gas to the local community, which would be something that could be of benefit to all in the region. Likewise, ensuring the royalties or a community benefit fund reached and supported the shire's towns and surrounds was expressed as important even though many were sceptical that this would be achieved. This perspective taps into notions of distributional fairness, a concept fundamental to a social licence to operate framework, whereby those that experience the cost or wear the risk to their community of having CSG development should also be the ones that receive commensurate benefits.

## 4.9 Extending the location of the wells and including fracking would undermine trust

Any future changes to possible fracking of wells and extension of well locations into prime farming land would potentially damage trust and any social licence to operate. Fracking represents a type of risk that is of significant concern for participants. Because the Narrabri project has been described by the CSG company as not requiring fracking to remove gas, this cause for concern is alleviated for many of those participants who are accepting of gas. Moreover, the potential for fracking was described as underpinning participant's oppositional views towards the project.

Similarly, participants who were accepting of CSG development described the Pilliga forest as a suitable place for development. They depicted the Pilliga as scrub with very poor soil and vegetation and an area not viable for agricultural activity. They described CSG as an effective solution for making the forest and the adjacent marginal farming areas more useful. However, they would be far less supportive if extraction extended to more productive agricultural areas and indicated that for many they would reconsider and likely not support extensive CSG development in the region.

## 4.10 CSG development narrative lacks broader context

Most participants didn't refer to broader state wide or societal benefits that CSG development would purportedly deliver and many were unaware of the state's Gas Plan. The evidence suggested that for participants who were against CSG development, there was a lack of a strong narrative, or clear case, as to why gas is needed. These participants expressed their preference for renewables over fossil fuels and their disbelief in the role of CSG as a transition fuel. They also described doubt around a domestic gas shortage and the need to develop any additional on-shore gas. Community debate and individual reasoning would be better informed with governments, or their independent advisory bodies, presenting



the broader set of arguments and evidence (as a narrative) outlining the role of CSG development in helping to meet national and/or state-wide energy security needs and its contribution as a transition fuel over time to a new energy mix. This would support people in more accurately understanding the need for gas and the role of CSG development. Such a narrative would also give communities like Narrabri the opportunity to weigh-up, and then better negotiate, considerations of distributional fairness as described above, particularly as it relates to local versus wider state and national benefits of the proposed development.

# 5 Key factors underpinning levels of acceptance

In synthesising and summarising the findings we identify a range of factors that influence different levels of acceptance. These factors could also be described as underlying drivers of acceptance or lack of acceptance. It is the way in which people view these different factors that contribute to differences in overall attitudes towards CSG development. Some factors underpin others and influence perceptions of that factor, for example, fairness influences perceptions of trust, and governance influences perceptions of risk and levels of trust in the sector. Figure 2 outlines seven key factors and lists the salient points identified in the data that underlies each factor.

It is important to recognise that a qualitative approach as used in this study has been able to provide a rich understanding of these differences, but is limited in its ability to predict the extent of these differing views or the relationship between them. Nor is the qualitative method able to identify which drivers are more important in accounting for differences in peoples’ views. Rather, a quantitative approach that uses statistics to infer the prevalence of views to the wider Narrabri shire and models the relationships between the variables is an appropriate methodology. The next research phase of this project will undertake such a quantitative study and survey a representative sample from the Narrabri region to identify the extent of views, measure the relative importance of underlying drivers, and model the relationships between these variables.

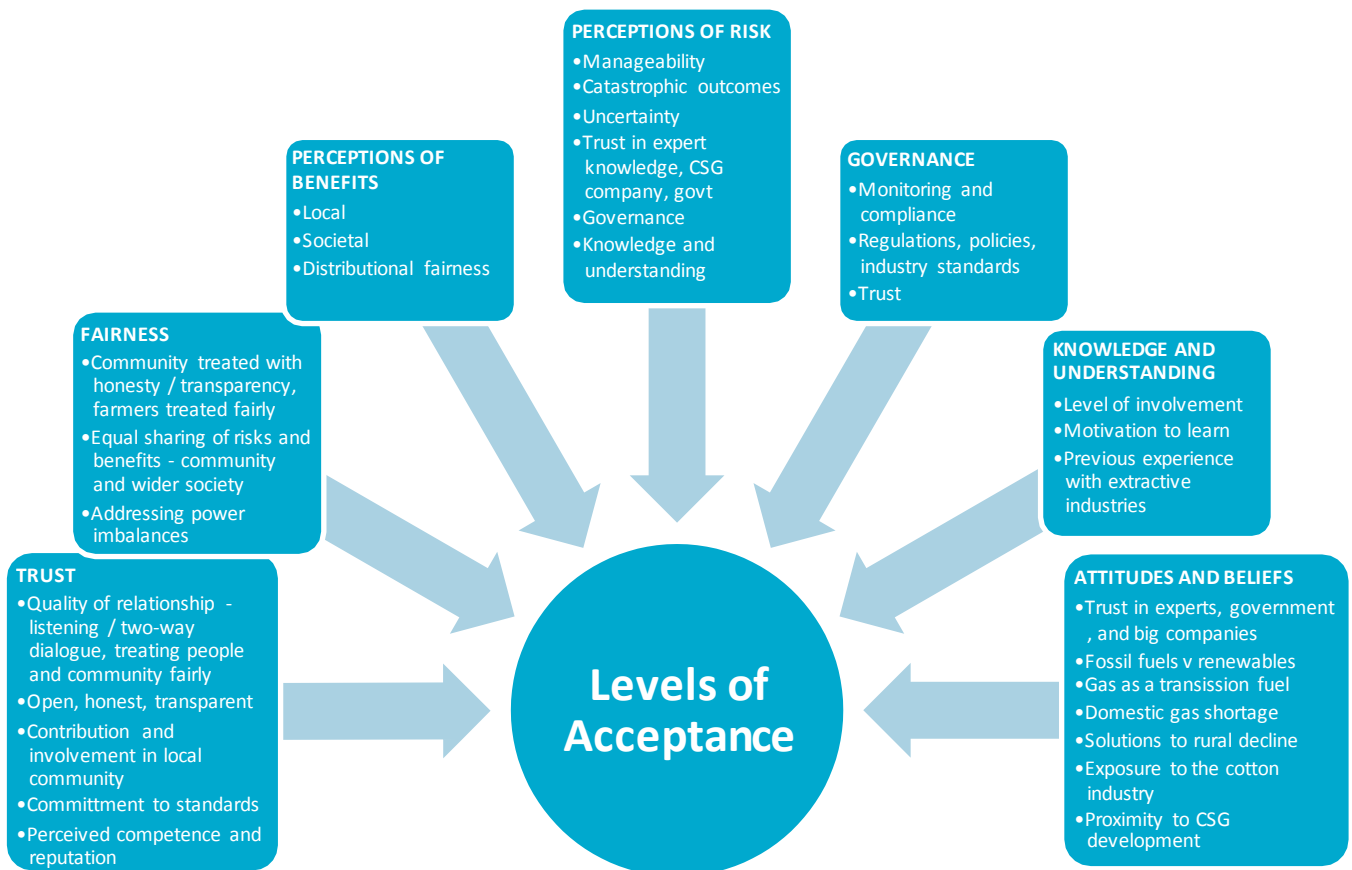


Figure 2 Seven key factors contributing to acceptance or lack of acceptance

# Next Steps – a shire-wide survey

The next research phase of this project will be a quantitative study and include a survey of a representative sample of 400 residents from the Narrabri region, conducted in the first half of 2017.

## WHAT WE WILL MEASURE

As well as measuring community perceptions, attitudes, and feelings about CSG development the survey will gather a baseline measures of community wellbeing and resilience in the shire. We will investigate community wellbeing along 15 different dimensions that can be grouped into six main categories



Community resilience is different and can be thought of as how well communities are responding to change, that is the actions they are taking or processes that are occurring. Our previous research has identified three types of actions important for community resilience in the context of CSG development, which we will explore in the survey.



## Appendix A: Examples of other concerns

Concerns	Description	Quotes
<b>The Pilliga forest</b>	Although participants largely described the Pilliga as an appropriate place for developing CSG, some participants expressed their concerns for protecting the biodiversity of the forest from the impacts of gas related infrastructure.	<p><i>"I don't see that the drilling aspect is probably an issue. I think it's just the disturbance of the forest ... large aspects of the forest that have been undisturbed and then you have roads and pipelines and tracks through the forest that weren't there before ... what I've seen in the forests, flying over Queensland ... it's absolutely striking. The visual appearance of the forests are just crisscrossed with roads ... the disruption ... in terms of just how birds interact and animals move and... [erosion and weeds] ... it's all those things that relate to habitat ... and disturbance"</i> (CM9)</p> <p><i>"I'd also not like to see animals and the environment in the Pilliga Forest - I wouldn't like to see that harmed"</i> (CM12)</p>
<b>Fire</b>	Potential for fire from the wells	<p><i>"I have thought about fires in the forest, just as a worried mother. ... I'm like oh my gosh, ... because we do get a lot of bush fires, ... My husband says that all the gas holes are sealed really well, they have lots of stuff in place"</i> (CM12)</p>
<b>Impact on the towns</b>	Housing affordability Boom bust effects Changed rural identity FIFO workers	<p><i>"Santos have put a lot of money into the community and have helped a lot which is fantastic and put programs in place and things like that. But then you've got the [housing]. So like for renters - it's just brought out the greed in people. Like you know renting shitty little old houses at exorbitant rents because people have gotten greedy because like oh miners are in town. They've got plenty of money... So it's not a direct thing because of the gas but like it is like an indirect thing that's pushed up and affects the community."</i> (CM4)</p> <p><i>"That's one of my concerns. I don't want to be an Emerald or a Roma, because as a country person rocking into those towns, they generally feel like they've lost a fair bit of their sense of community... and you see that boom and bust thing... [I wouldn't want that here]"</i> (CM9)</p> <p><i>"There are the fly-in fly-out [workers], they tend to consume the facilities of a community but don't invest back in it"</i> (CM13)</p>
<b>Possible health issues</b>	Although many participants were not concerned or worried by possible health impacts those that were described the following concerns: <ul style="list-style-type: none"> <li>- Contamination of air and water causing possible health issues</li> <li>- Health problems that may emerge in the future</li> </ul>	<p><i>"The risk of them contaminating our town water supply, that's my biggest concern"</i> (CM2)</p> <p><i>"I guess my two biggest [concerns] is ... the air we breathe and the water we're drinking. ... How do I know that the garden I build is not going to be poisoned by the chemical - like the gas?"</i> (CM5)</p> <p><i>"I worry that in 20 years' time we're going to have a situation ... where we're going to have all these things come out. I worry for our water. I worry with the gas in the air for the - I worry for my kids. I'm worried about - not now I'm worried about down the track and what implication that's going to have on their - growth and development. You know the chemicals coming out through the water."</i> (CM4)</p> <p><i>"What's happening in Chinchilla with the bubbling underneath in the river systems, in the water systems? What impact does that have on health and livestock? .... [I'm potentially going to be living near it] ... Who actually wants to live near a gas field? ... [I hear my friends say this too] ... This is where I want my kids to grow up, and I want that to be a safe environment for them"</i> (CM6)</p>
<b>Changes to the rural landscape</b>	Impacts such as Increased dust, noise, and traffic	<p><i>"My concerns are really about the industrialisation of rural areas and how you don't get a choice in that industrialisation ... particularly ... the increase in traffic, dust, noise and visual amenity."</i> (CM25)</p>

<b>Salt management</b>	Unresolved salt and brine management of extracted water	<i>“My main concerns are the water; how much they use, what happens to the water that they bring up, what happens to the salt once they separate it from the water and what happens to the brine. At the moment they still don't have anything - no way of disposing of the salt, no way of disposing of the brine.” (CM18)</i>
<b>Future uncertainties</b>	Decommissioning Possible health impacts	<p><i>“We're still going to be left with 800 holes through all the aquifers and - virtually forever, aren't we? Should I be worried about that? I don't know. Forever is a long time ... what is the process for decommissioning?” (CM13)</i></p> <p><i>“How much research is there into CSG and the general health of anybody who comes in contact with it? Like with the methane - is there health concerns with that? ... What effects does [the flaring] have on humans living in that area, breathing it in every day? I don't know. Is there studies? Is there - in 20 years' time is it going to say, oh, whoopsy, probably shouldn't have been living near that.” (CM6)</i></p>

#### CONTACT US

**t** 1300 363 400  
+61 3 9545 2176  
**e** [csiroenquiries@csiro.au](mailto:csiroenquiries@csiro.au)  
**w** [www.csiro.au](http://www.csiro.au)  
1300 363 400  
+61 3 9545 2176  
**e** [enquiries@csiro.au](mailto:enquiries@csiro.au)  
**w** [www.csiro.au](http://www.csiro.au)

#### FOR MORE INFORMATION

Land and Water  
Dr Andrea Walton  
**t** +61 7 3833 5675  
**e** [andrea.walton@csiro.au](mailto:andrea.walton@csiro.au)

Dr Rod McCrea  
**t** +61 7 3833 5677  
**e** [rod.mccrea@csiro.au](mailto:rod.mccrea@csiro.au)

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